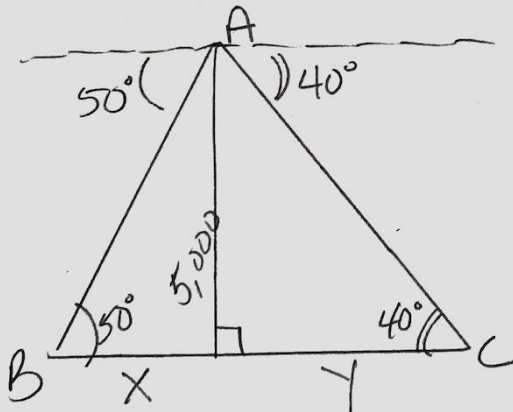


Warmup - Applications #3

- Set up a trig ratio equation.
- Solve. Write and label your answer. Round to the nearest tenth.

Airplane, A, is in the same vertical plane as two towns, B and C. The height of the plane is 5,000 feet. The angle of depression to town B is 50° and the angle of depression to town C is 40° . Find the distance between the two towns.



$$\tan 50^\circ = \frac{5000}{x}$$

$$\frac{x \tan 50^\circ}{\tan 50^\circ} = \frac{5000}{\tan 50^\circ}$$

$$x = \frac{5000}{\tan 50^\circ}$$

$$x = 4195.498156$$

$$\tan 40^\circ = \frac{5000}{y}$$

$$\frac{y \tan 40^\circ}{\tan 40^\circ} = \frac{5000}{\tan 40^\circ}$$

$$y = \frac{5000}{\tan 40^\circ}$$

$$y = 5958.767963$$

$x + y$

$$4195.498 + 5958.768$$

$$= \boxed{10,154.3 \text{ ft.}}$$